

Fig. 5a: Aqua-Terra Comparisons

- Use the flux observations from one satellite as an independent data set to test fluxes interpolated from the other
- The flux difference represents the total interpolation error from the NB-BB, calibration, ADMs, and normalization
- Aqua/Terra monthly mean flux consistency also tested

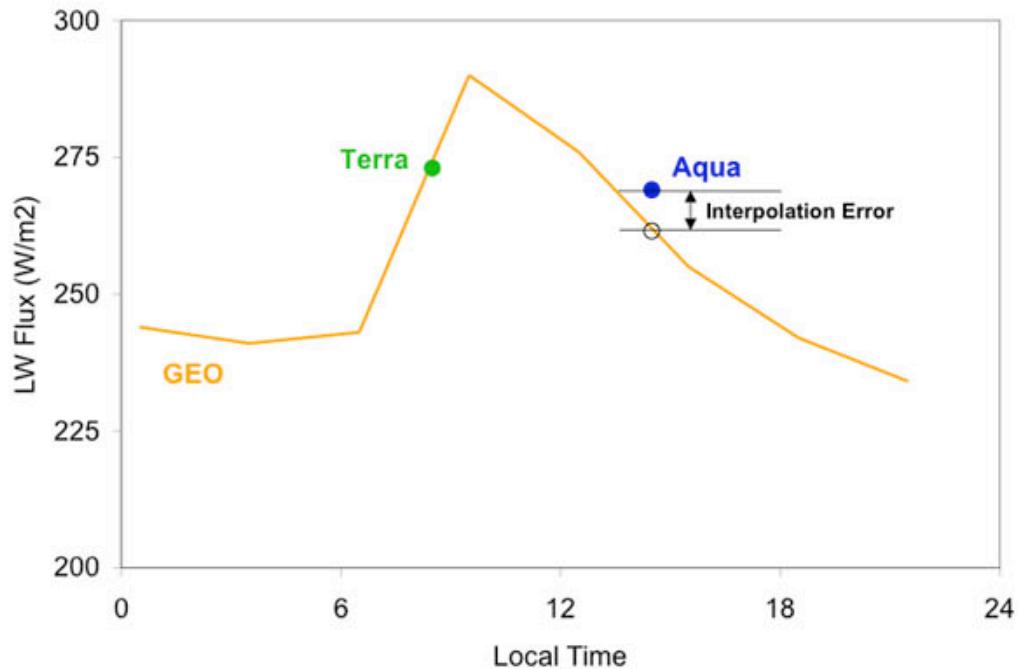


Fig. 5b: Terra Interpolated vs. Aqua Observed Total-sky TOA SW Flux Instantaneous December 2002

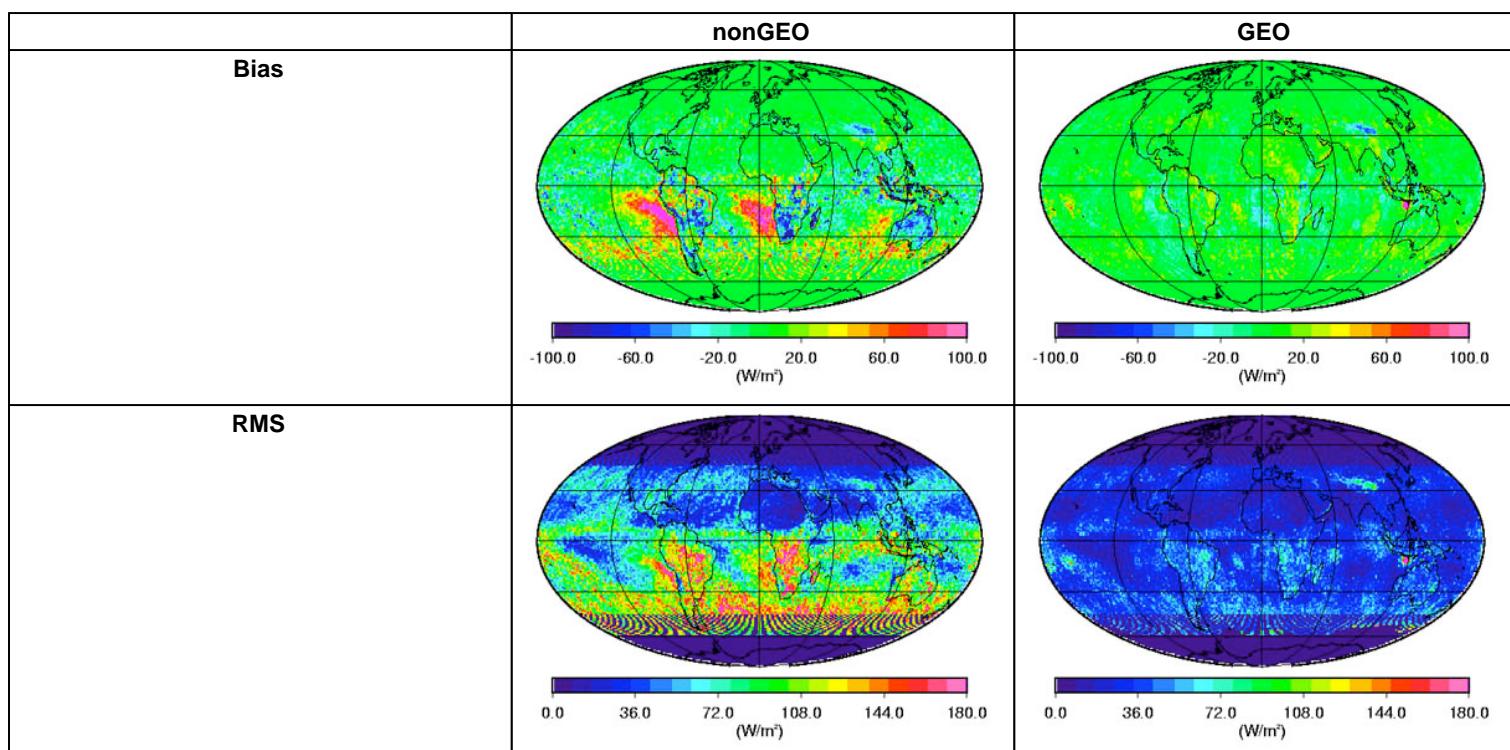


Fig. 5c: Instantaneous Total-sky TOA SW Flux Interpolation Differences
60°N to 60°S July 2002 - February 2003

Bias

RMS

SWtot BIAS	nonGEO		GEOtot		SWtot RMS	nonGEO		GEOtot	
Wm-2	Terra	Aqua	Terra	Aqua	Wm-2	Terra	Aqua	Terra	Aqua
OCN	5.0	-6.1	0.3	1.8	OCN	84.0	84.4	34.3	35.8
(%)	2.2	-2.6	0.1	0.8	(%)	36.9	36.2	15.2	15.5
LND	-9.6	9.2	3.3	2.8	LND	87.4	88.3	37.8	36.2
(%)	-3.3	3.3	1.1	1.0	(%)	30.1	31.2	13.0	12.7
DES	-6.8	6.3	4.7	4.9	DES	51.4	51.2	27.1	25.6
(%)	-2.4	2.3	1.7	1.8	(%)	18.4	18.6	9.7	9.3
ALL	1.5	-2.4	1.0	2.3	ALL	81.4	81.8	34.7	35.4
(%)	0.6	-1.0	0.4	1.0	(%)	33.7	33.5	14.4	14.6

Fig. 5d: Terra Interpolated vs. Aqua Observed Total-sky TOA LW Flux
Daytime December 2002

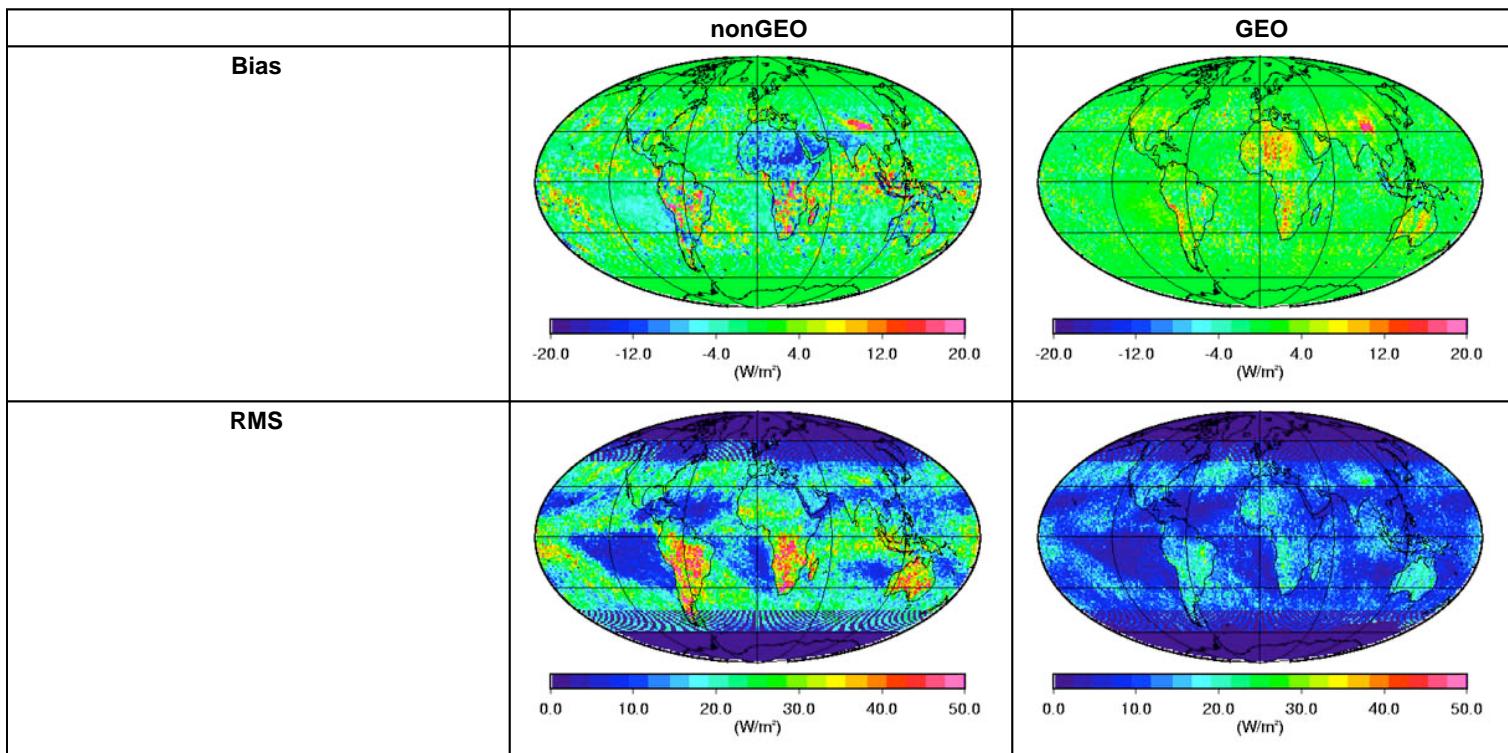


Fig. 5e: Instantaneous Total-sky TOA LW Flux Interpolation Differences
DAY July 2002 - February 2003

Bias

RMS

LWday BIAS	nonGEO		GEOtot		LWday RMS	nonGEO		GEOtot	
	Terra	Aqua	Terra	Aqua		Terra	Aqua	Terra	Aqua
Wm-2	Terra	Aqua	Terra	Aqua	Wm-2	Terra	Aqua	Terra	Aqua
OCN	-0.8	1.1	-0.1	1.7	OCN	18.7	19.4	10.7	10.8
(%)	-0.3	0.4	0.0	0.7	(%)	7.5	7.9	4.3	4.4
LND	-1.3	-0.1	2.1	1.9	LND	25.7	25.3	13.9	13.6
(%)	-0.5	-0.1	0.8	0.8	(%)	10.1	9.9	5.4	5.3
DES	-6.0	3.5	4.3	2.5	DES	22.5	22.5	13.9	13.1
(%)	-2.1	1.2	1.5	0.9	(%)	7.7	7.8	4.8	4.6
ALL	-1.1	0.9	0.6	1.8	ALL	20.1	20.5	11.4	11.4
(%)	-0.5	0.4	0.2	0.7	(%)	8.0	8.2	4.6	4.6

Fig. 5f: Terra Interpolated vs. Aqua Observed Total-sky TOA LW Flux
Nighttime December 2002

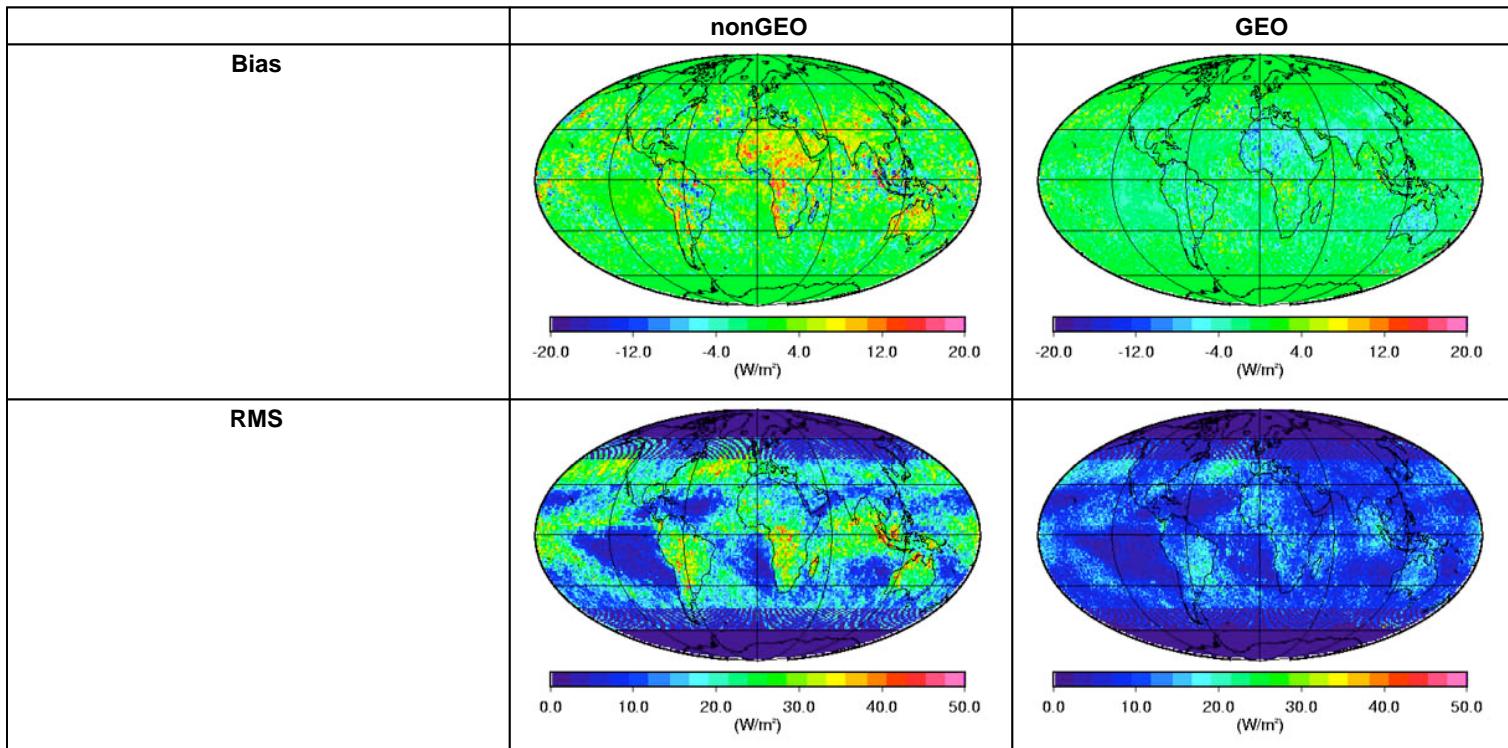


Fig. 5g: Instantaneous Total-sky TOA LW Flux Interpolation Differences
NIGHT July 2002 - February 2003

LWnit BIAS	nonGEO		GEOtot		LWnit RMS	nonGEO		GEOtot	
	Terra	Aqua	Terra	Aqua		Terra	Aqua	Terra	Aqua
Wm-2					Wm-2				
OCN	0.4	-0.6	-0.8	-0.6	OCN	17.5	18.9	10.4	11.0
(%)	0.2	-0.2	-0.3	-0.2	(%)	7.0	7.6	4.2	4.4
LND	1.4	1.1	-2.4	-1.1	LND	22.6	25.9	12.0	13.5
(%)	0.6	0.5	-1.0	-0.5	(%)	9.6	10.9	5.1	5.7
DES	3.9	2.0	-4.1	-2.4	DES	18.2	21.8	10.6	11.2
(%)	1.5	0.8	-1.6	-0.9	(%)	7.1	8.4	4.2	4.3
ALL	0.8	-0.1	-1.3	-0.8	ALL	18.4	20.3	10.6	11.4
(%)	0.3	0.0	-0.5	-0.3	(%)	7.5	8.3	4.3	4.7

Fig. 5h: SW Terra-Aqua Monthly Mean Comparisons

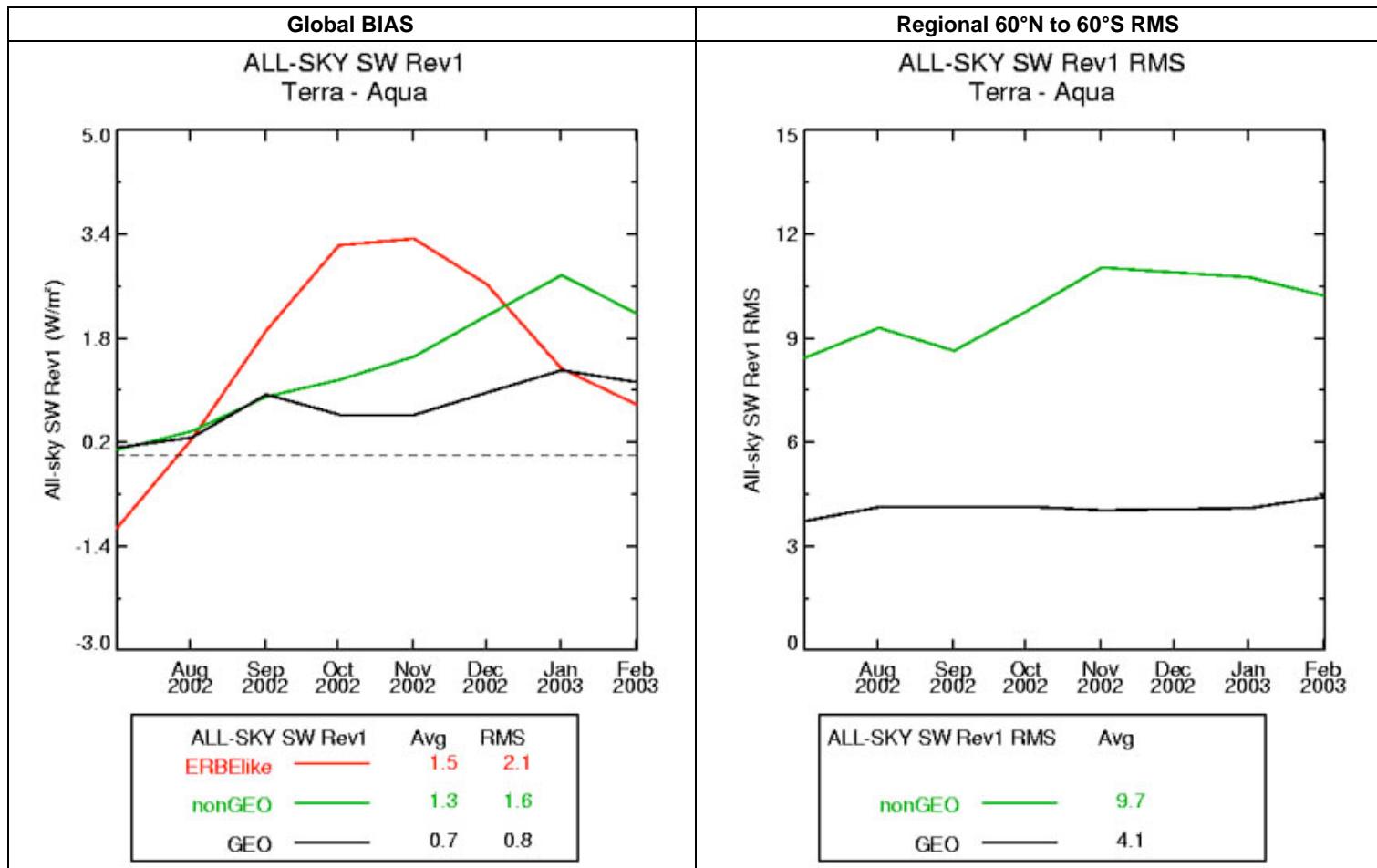


Fig. 5i: LW Terra-Aqua Monthly Mean Comparisons

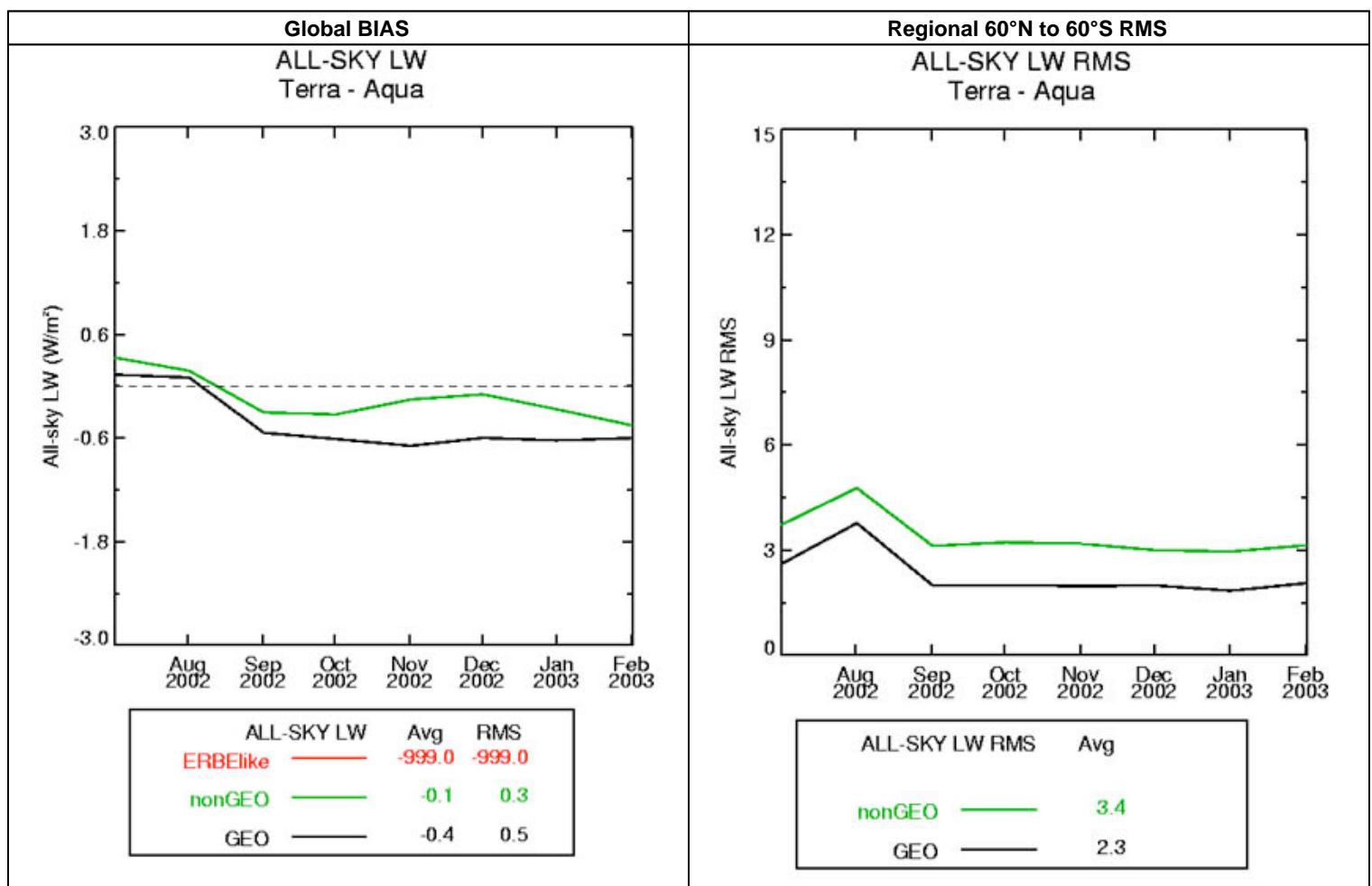


Fig. 5j: Aqua-Terra Comparison Summary

- Global mean instantaneous GEO differences are within 1%
 - Possible night time negative bias over deserts for LW night
- Instantaneous GEO rms differences are 15% and 4.5% for SW and LW respectively
 - A 50% reduction from non-GEO for both SW and LW
- Monthly mean global SW GEO differences (<1%) are less than either nonGEO or ERBE-like
 - The LW GEO land night may have issues, (bias -0.2%)
- Monthly mean regional GEO RMS differences are 4.4% and 1.0% for SW and LW respectively
 - A ~30% reduction from non-GEO

